

WHAT IS CLAIMED IS:

1. A hydropneumatic axle suspension having an adjustable axle-spring rate for a vehicle having varying axle loads, comprising:
  - a first hydropneumatic accumulator;
  - a hydraulic suspension cylinder having a cylinder chamber and an annular space;
  - a first pressure-regulated suspension circuit connecting the cylinder chamber to the first hydropneumatic accumulator;
  - a level-control device for regulating a pressure in the first suspension circuit;
  - a second hydropneumatic accumulator;
  - a second pressure-regulated suspension circuit connecting the annular space to the second hydropneumatic accumulator; and
  - an electromagnetic actuator configured to automatically change the axle spring rate according to a predefined control mode.
2. The hydropneumatic axle suspension as recited in claim 1 further comprising an electronic control unit linked to the electromagnetic actuator and configured to process electronic measured data.
3. The hydropneumatic axle suspension as recited in claim 1 wherein the axle-spring rate is adjustable between a first and a second predefined spring rate using external control signals.
4. The hydropneumatic axle suspension as recited in claim 1 further comprising a proportional pressure-regulating valve configured to proportionally regulate the axle-spring rate between a first and a second constant pressure value.
5. The hydropneumatic axle suspension as recited in claim 4 wherein the proportional pressure-regulating valve is further configured to regulate the axle-spring rate to a selectable constant pressure.
6. The hydropneumatic axle suspension as recited in claim 1, further comprising a first 2/2 directional control valve for regulating the first suspension circuit and a second 2/2 directional control valve for regulating the second suspension circuit.

7. The hydropneumatic axle suspension as recited in claim 6, wherein the first and second 2/2 directional control valves hydraulically block the first and second suspension circuits when a level position is reached.
8. The hydropneumatic axle suspension as recited in claim 4 further comprising a shuttle valve and a first pressure line hydraulically linking the shuttle valve to the pressure-regulating valve so that when the pressure-regulating valve is not energized by a current, the shuttle valve is able to relieve the first pressure line of pressure.
9. The hydropneumatic axle suspension as recited in claim 8 further comprising an orifice valve, a 2/2 directional control valve and a supply line, a control line of the shuttle valve being connected between the 2/2 directional control valve and the orifice valve for sensing a pressure in the cylinder chambers.
10. The hydropneumatic axle suspension as recited in claim 1 further comprising a first orifice valve installed in a supply line of the first suspension circuit and a second orifice valve installed in a supply line of the second suspension circuit, the orifice valves being used for adapting a control time of the change in the axle-spring rate.
11. The hydropneumatic axle suspension as recited in claim 1, wherein the hydropneumatic axle suspension is for a front axle of a tractor.